

REMARKS

Claims 8-23 are currently pending in this application. Claims 1-7 were previously canceled. By this amendment, claims 8, 14 and 19 have been amended to further set forth the application. No new matter has been added. Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 8 and 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Budelman, U.S. Patent No. 6,244,331.

Amended claim 8 recites an embedded centrifugal cooling device including a centrifugal fan and a heat sink. The centrifugal fan includes a rotary shaft and a plurality of blades. The heat sink includes a plurality of first cooling fins and a plurality of second cooling fins. An annular cavity is defined between the first cooling fins and the second cooling fins. The second cooling fins include a lower portion. The blades are located in the cavity, and the rotary shaft is located above the lower portion of the second cooling fins.

Amended claim 14 recites an embedded centrifugal cooling device including a heat sink, a cover, and a centrifugal fan. The heat sink includes a plurality of first cooling fins and a plurality of second cooling fins. A cavity is defined between the first cooling fins and the second cooling fins, and the second cooling fins include a lower portion. The cover is connected to the heat sink. The centrifugal fan includes a rotary shaft and a plurality of blades. The blades are located in the cavity, and the rotary shaft is connected to the cover and is located above the lower portion of second cooling fins.

Amended claim 19 recites an embedded centrifugal cooling device including a heat sink, a centrifugal fan, and a cover. The heat sink includes a plurality of first cooling fins and a plurality of second cooling fins. A cavity is defined between the first cooling fins and the second cooling fins, and the second cooling fins include a lower portion. A centrifugal fan, having an axial direction and radial directions, includes a rotary shaft and a plurality of blades. The blades are located in the cavity, and the rotary shaft is located above the lower portion of the second cooling fins. The cover, including a plurality of inlets, is disposed on said heat sink and said centrifugal fan. Air from ambient is flowed in the axial direction of the centrifugal fan into the heat sink from the inlets of the cover, and is flowed in the radial directions of the centrifugal fan out of the heat sink.

Specifically, since the rotary shaft 210 of the centrifugal is located above the lower portion 131 of the second cooling fins 130, the second cooling fins 130 are distributed under the central region of the centrifugal fan 200. Thus, the heat mainly concentrated in the central region of the heat-generating device is dissipated effectively.

Budelman discloses a heat sink with integrated blower for improved heat transfer. The thermal dissipation device 410 includes a base 412 and a blower 522. A plurality of pins 414, 428, 430 is distributed on the base 412. A space 416 is defined between the pins 428 and the pins 430. A space 418 is formed in the pins 418. The motor 524 of the blower 522 is affixed to the base 412 within the space 418.

In Budelman, since the blower 522 is affixed to the base 412 within the space 418, there are no fins distributed at the central region of the base 412. Thus, the heat mainly concentrated in the central region of the heat-generating device cannot be dissipated effectively.

Since Budelman does not teach that the rotary shaft is located above the lower portion of the second cooling fins, this reference does not disclose all the limitations of claim 8. Therefore, for at least this reason, applicants respectfully submit that claim 8 is allowable over Budelman. Since claims 10 -13 depend from claim 8, applicants submit that claims 10-13 are also allowable for at least the reasons set forth above.

For the same reason, Budelman does not teach or suggest the limitations of independent claims 14 and 19. Hence, applicants respectfully submit that these claims, and claims 16-18 and 21-23, which depend from claims 14 and 19 respectively, are also allowable for at least the reasons set forth above.

Claims 9, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budelman, in view of Miyahara, et al., U.S. Patent No. 5,940,268 (hereinafter "Miyahara").

Since Budelman does not disclose all the limitations of independent claims 8, 14 and 19, applicants respectfully submit that Claims 9, 15 and 20, which depend respectively therefrom, are allowable over the cited prior art references for at least the same reasons as set forth above.

In view of the amendments to the specification and claims and the remarks set forth above distinguishing the claimed invention from the cited prior art references, Applicants submit that the Examiner's objections and rejections have been overcome. It is therefore respectfully requested that the Examiner withdraw the objections and rejections and allow the present claims.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 50-2394.

Respectfully submitted,

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